



P.B.5818 - Patentlaan 2
2260 HV Rijswijk (ZH)
☎ +31 70 340 2040
TX 31651 epo nl
FAX +31 70 340 3016

Europäisches
Patentamt

Zweigstelle
in Den Haag
Recherchen-
abteilung

European
Patent Office

Branch at
The Hague
Search
division

Office européen
des brevets

Département à
La Haye
Division de la
recherche

Laufhütte, Dieter, Dr.-Ing.
Lorenz-Seidler-Gosse
Widenmayerstrasse 23
80538 München
ALLEMAGNE

Frist

Datum/Date

16.10.03

Zeichen/Ref./Réf.

01754-03 La/bz

Anmeldung Nr./Application No./Demande n°/Patent Nr./Patent No./Brevet n°.

03014110.5-2220-

Anmelder/Applicant/Demandeur/Propriétaire/Titulaire

Murata Manufacturing Co., Ltd.

COMMUNICATION

The European Patent Office herewith transmits as an enclosure the European search report for the above-mentioned European patent application.

If applicable, copies of the documents cited in the European search report are attached.

☒ Additional set(s) of copies of the documents cited in the European search report is (are) enclosed as well.

The following specifications given by the applicant have been approved by the Search Division:

☐ abstract

☒ title

☒ The abstract was modified by the Search Division and the definitive text is attached to this communication.

The following figure will be published together with the abstract:

1

REFUND OF THE SEARCH FEE

If applicable under Article 10 Rules relating to fees, a separate communication from the Receiving Section on the refund of the search fee will be sent later.



**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 03 01 4110

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

01-10-2003

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 0609746 A	10-08-1994	JP 6232601 A	19-08-1994
		EP 0609746 A1	10-08-1994
		US 5485130 A	16-01-1996
DE 19953178 A	26-10-2000	JP 2000294568 A	20-10-2000
		DE 19953178 A1	26-10-2000
		US 6320476 B1	20-11-2001
JP 2000332502 A	30-11-2000	NONE	
JP 05055803 2 A		NONE	
US 4789846 A	06-12-1988	JP 2041647 C	09-04-1996
		JP 7077321 B	16-08-1995
		JP 63197101 A	16-08-1988
		FR 2607643 A1	03-06-1988
US 4023125 A	10-05-1977	NONE	



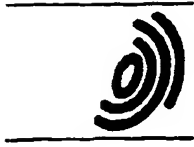
DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
A	EP 0 609 746 A (MITSUBISHI ELECTRIC CORP) 10 August 1994 (1994-08-10) * page 4, line 7 - page 5, line 8 * * figures 1-3 * * abstract *	1,3,11	H01P1/15
A	DE 199 53 178 A (MITSUBISHI ELECTRIC CORP) 26 October 2000 (2000-10-26) * column 5, line 3 - column 7, line 2 * * column 7, line 64 - column 8, line 49 * * figures 1A-3,7A,7B * * abstract *	1,3	
D,A	PATENT ABSTRACTS OF JAPAN vol. 2000, no. 14, 5 March 2001 (2001-03-05) & JP 2000 332502 A (DENSO CORP), 30 November 2000 (2000-11-30) * abstract * * figure *	1,3	
A	PATENT ABSTRACTS OF JAPAN vol. 017, no. 359 (E-1395), 7 July 1993 (1993-07-07) & JP 05 055803 A (MITSUBISHI ELECTRIC CORP), 5 March 1993 (1993-03-05) * abstract * * figure *	1,3	TECHNICAL FIELDS SEARCHED (Int.Cl.7) H01P H04B
A	US 4 789 846 A (IYAMA YOSHITADA ET AL) 6 December 1988 (1988-12-06) * column 7, line 34 - column 8, line 54 * * figures 5A,5B,6 * * abstract *	1,3,11	
The present search report has been drawn up for all claims			
Place of search MUNICH		Date of completion of the search 1 October 2003	Examiner von Walter, S-U
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

1
EPO FORM 1503 03.02 (P04C01)



DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
A	US 4 023 125 A (WOLFE ALLEN ROBERT) 10 May 1977 (1977-05-10) * column 2, line 35 - column 5, line 40 * * figures 1,2,5 * * abstract * -----	1,3,6,11	
			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
The present search report has been drawn up for all claims			
Place of search MUNICH		Date of completion of the search 1 October 2003	Examiner von Walter, S-U
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

1
EPO FORM 1503 03.82 (Pct/Co1)



ABSTRACT / ZUSAMMENFASSUNG / ABREGE

03014110.5

A high-frequency switch (10) comprises: a substrate (11); a main line electrode (12) provided between two terminals; a stub line electrode (15) with one end thereof connected to the side edge of the main line electrode and the other end thereof grounded; and a ground electrode (16) provided adjacent to the stub line electrode in the width direction thereof; wherein the substrate has a semiconductor activation layer (19) which extends to below the stub line electrode (15) and the ground electrode (16) between at least one side edge of the stubline electrode and the ground electrode; and wherein a gate electrode (20) which extends in the longitudinal direction of the stub line electrode is provided on the semiconductor activation layer between the stub line electrode and the ground electrode, thereby forming an FET structure, thus providing a high-frequency switch and electronic device therewith, capable of using high frequencies, having reduced insertion loss, and high signal cutoff capabilities.